

SEQUENCE LISTING

<110> W. James Jackson

<120> CHLAMYDIA PROTEIN, GENE SEQUENCE AND USES THEREOF

<130> 7969-087

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<170> FastSEQ for Windows Version 3.0

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<212> DNA

<213> Chlamydia sp

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Leu	Ala	Arg	Glu	Val	Pro	Ser	Arg	Ile	Phe	Leu	Met	Pro	Asn	Ser	Val	
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cca	gat	cct	acg	aaa	gag	tcg	cta	tca	aat	aaa	att	agt	ttg	aca	gga	144
Pro	Asp	Pro	Thr	Lys	Glu	Ser	Leu	Ser	Asn	Lys	Ile	Ser	Leu	Thr	Gly	
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Thr	Asp	Tyr	Leu	Ser	Phe	Phe	Asp	Thr	Gln	Lys	Glu	Gly	Ile	Tyr	Phe	
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gca	aaa	aat	ctc	acc	cct	gaa	agt	ggt	ggt	gcg	att	ggt	tat	gcg	agt	336
Ala	Lys	Asn	Leu	Thr	Pro	Glu	Ser	Gly	Gly	Ala	Ile	Gly	Tyr	Ala	Ser	
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Pro	Asn	Ser	Pro	Thr	Val	Glu	Ile	Arg	Asp	Thr	Ile	Gly	Pro	Val	Ile	
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Phe	Glu	Asn	Asn	Thr	Cys	Cys	Arg	Pro	Phe	Thr	Ser	Ser	Asn	Pro	Asn	
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Leu Tyr Ile Asn His Asn His Asp Val Val Gly Phe Met Lys Asn Phe	
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tct tat gtc cga gga gga gcc att agt acc gct aat acc ttt gtt gtg	576
Ser Tyr Val Arg Gly Gly Ala Ile Ser Thr Ala Asn Thr Phe Val Val	
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agc gag aat cag tct tgt ttt ctc ttt atg gac aac atc tgt att caa	624
Ser Glu Asn Gln Ser Cys Phe Leu Phe Met Asp Asn Ile Cys Ile Gln	
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act aat aca gca gga aaa ggt ggc gct atc tat gct gga acg agc aat	672
Thr Asn Thr Ala Gly Lys Gly Gly Ala Ile Tyr Ala Gly Thr Ser Asn	
210 215 220	
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Ser Phe Glu Ser Asn Asn Cys Asp Leu Phe Phe Ile Asn Asn Ala Cys	
225 230 235 240	
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Cys Ala Gly Gly Ala Ile Phe Ser Pro Ile Cys Ser Leu Thr Gly Asn	
245 250 255	
cgt ggt aac atc gtt ttc tat aac aat cgc tgc ttt aaa aat gta gaa	816
Arg Gly Asn Ile Val Phe Tyr Asn Asn Arg Cys Phe Lys Asn Val Glu	
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Val Asp Asn Gly Pro Thr Tyr Phe Ile Asn Asn Ile Ala Asn Asn Lys	
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Gly Gly Ala Ile Tyr Ile Asp Gly Thr Ser Asn Ser Lys Ile Ser Ala	
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Asp Arg His Ala Ile Ile Phe Asn Glu Asn Ile Val Thr Asn Val Thr	
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Asn Ala Asn Gly Thr Ser Thr Ser Ala Asn Pro Pro Arg Arg Asn Ala	
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Ile Thr Val Ala Ser Ser Ser Gly Glu Ile Leu Leu Gly Ala Gly Ser	
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Ser Gln Asn Leu Ile Phe Tyr Asp Pro Ile Glu Val Ser Asn Ala Gly	
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Val Ser Val Ser Phe Asn Lys Glu Ala Asp Gln Thr Gly Ser Val Val	
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Phe Ser Gly Ala Thr Val Asn Ser Ala Asp Phe His Gln Arg Asn Leu	
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Tyr Gly Asn Ser Pro Tyr Glu Ser Thr Asp Leu Thr His Ala Leu Ser	
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Ala Ser Ser Ala Thr Ile Thr Asp Pro Gln Lys Ala Asn Arg Phe His	
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Arg Thr Leu Leu Leu Thr Trp Leu Pro Ala Gly Tyr Val Pro Ser Pro	
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Leu Ala Thr Glu Ser Leu Lys Asn Ser Ala Glu Leu Thr Pro Ser Asp	
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His Pro Phe Trp Gly Ile Thr Gly Gly Gly Leu Gly Met Met Val Tyr	
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Gln Asp Pro Arg Glu Asn His Pro Gly Phe His Met Arg Ser Ser Gly	
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Val Ser Ser Lys Asn Tyr Ser Cys Gln Gly Glu Met Leu Phe Ser Leu	
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Gln Glu Gly Phe Leu Leu Thr Lys Leu Val Gly Leu Tyr Ser Tyr Gly	
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Gln Gly Thr Phe Arg Ser Gln Thr Met Gly Gly Ala Val Phe Phe Asp	
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Leu Gly Ala Leu Gly Ile Tyr Ser Ser Leu Ser His Phe Thr Glu Val	
835 840 845	
gga gcc tat ccg cga agc ttt tct aca aag act cct ttg atc aat gtc	2592
Gly Ala Tyr Pro Arg Ser Phe Ser Thr Lys Thr Pro Leu Ile Asn Val	
850 855 860	
cta gtc cct att gga gtt aaa ggt agc ttt atg aat gct acc caa aga	2640
Leu Val Pro Ile Gly Val Lys Gly Ser Phe Met Asn Ala Thr Gln Arg	
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885 890 895	
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Gln Glu Pro Gly Ile Ala Thr Gln Leu Leu Ala Ser Lys Gly Ile Trp	
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cat gga ttc tac tcc tct tca acc ttc tgt aat tat ctc aat ggg gaa	2880
His Gly Phe Tyr Ser Ser Ser Thr Phe Cys Asn Tyr Leu Asn Gly Glu	
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Ile Ala Leu Arg Phe	
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Pro Asp Pro Thr Lys Glu Ser Leu Ser Asn Lys Ile Ser Leu Thr Gly	
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Val	Asp	Asn	Gly	Pro	Thr	Tyr	Phe	Ile	Asn	Asn	Ile	Ala	Asn	Asn	Lys
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Gly	Gly	Ala	Ile	Tyr	Ile	Asp	Gly	Thr	Ser	Asn	Ser	Lys	Ile	Ser	Ala
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Val	Ser	Val	Ser	Phe	Asn	Lys	Glu	Ala	Asp	Gln	Thr	Gly	Ser	Val	Val
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Phe	Ser	Gly	Ala	Thr	Val	Asn	Ser	Ala	Asp	Phe	His	Gln	Arg	Asn	Leu
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Gln	Thr	Lys	Thr	Pro	Ala	Pro	Leu	Thr	Leu	Ser	Asn	Gly	Phe	Leu	Cys
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Gly	Leu	Asn	Leu	Ser	Ser	Ile	Leu	Lys	Ser	Gly	Ala	Glu	Ile	Pro	Leu
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Leu	Trp	Val	Glu	Pro	Thr	Asn	Asn	Ser	Asn	Asn	Tyr	Thr	Ala	Asp	Thr
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Lys	His	Arg	Ser	Pro	Leu	Ile	Ala	Asn	Thr	Leu	Trp	Gly	Asn	Met	Leu
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Tyr	Ser	Ala	Gly	Met	Ile	Ala	Gly	Gln	Thr	His	Thr	Phe	Ser	Leu	Lys
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Phe	Ser	Gln	Thr	Tyr	Thr	Lys	Leu	Asn	Glu	Arg	Tyr	Ala	Lys	Asn	Asn
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Gln	Glu	Gly	Phe	Leu	Leu	Thr	Lys	Leu	Val	Gly	Leu	Tyr	Ser	Tyr	Gly
	770					775					780				
Asp	His	Asn	Cys	His	His	Phe	Tyr	Thr	Gln	Gly	Glu	Asn	Leu	Thr	Ser
785					790					795					800
Gln	Gly	Thr	Phe	Arg	Ser	Gln	Thr	Met	Gly	Gly	Ala	Val	Phe	Phe	Asp
			805						810					815	
Leu	Pro	Met	Lys	Pro	Phe	Gly	Ser	Thr	His	Ile	Leu	Thr	Ala	Pro	Phe
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Leu	Gly	Ala	Leu	Gly	Ile	Tyr	Ser	Ser	Leu	Ser	His	Phe	Thr	Glu	Val
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	850					855					860				
Leu	Val	Pro	Ile	Gly	Val	Lys	Gly	Ser	Phe	Met	Asn	Ala	Thr	Gln	Arg
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Pro	Gln	Ala	Trp	Thr	Val	Glu	Leu	Ala	Tyr	Gln	Pro	Val	Leu	Tyr	Arg
			885						890					895	
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Ile	Ala	Leu	Arg	Phe											
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<212> DNA

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<220>

<221> CDS

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<400> 3

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Ser	Ser	Thr	Ala	Val	Leu	Phe	Gly	Gln	Asp	Pro	Leu	Gly	Glu	Thr	Ala	
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ctc	ctc	act	aaa	aat	cct	aat	cat	gtc	gtc	tgt	aca	ttt	ttt	gag	gac	144
Leu	Leu	Thr	Lys	Asn	Pro	Asn	His	Val	Val	Cys	Thr	Phe	Phe	Glu	Asp	
		35					40					45				
tgt	acc	atg	gag	agc	ctc	ttt	cct	gct	ctt	tgt	gct	cat	gca	tca	caa	192
Cys	Thr	Met	Glu	Ser	Leu	Phe	Pro	Ala	Leu	Cys	Ala	His	Ala	Ser	Gln	
	50					55				60						
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Asp	Asp	Pro	Leu	Tyr	Val	Leu	Gly	Asn	Ser	Tyr	Cys	Trp	Phe	Val	Ser	
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aaa	ctc	cat	atc	acg	gac	ccc	aaa	gag	gct	ctt	ttt	aaa	gaa	aaa	gga	288
Lys	Leu	His	Ile	Thr	Asp	Pro	Lys	Glu	Ala	Leu	Phe	Lys	Glu	Lys	Gly	
			85					90					95			
gat	ctt	tcc	att	caa	aac	ttt	cgc	ttc	ctt	tcc	ttc	aca	gat	tgc	tct	336
Asp	Leu	Ser	Ile	Gln	Asn	Phe	Arg	Phe	Leu	Ser	Phe	Thr	Asp	Cys	Ser	
			100				105						110			
tcc	aag	gaa	agc	tct	cct	tct	att	att	cat	caa	aag	aat	ggt	cag	tta	384
Ser	Lys	Glu	Ser	Ser	Pro	Ser	Ile	Ile	His	Gln	Lys	Asn	Gly	Gln	Leu	
		115					120					125				
tcc	ttg	cgc	aat	aat	ggt	agc	atg	agt	ttc	tgt	cga	aat	cat	gct	gaa	432
Ser	Leu	Arg	Asn	Asn	Gly	Ser	Met	Ser	Phe	Cys	Arg	Asn	His	Ala	Glu	
	130					135					140					
ggc	tct	gga	gga	gcc	atc	tct	gcg	gat	gcc	ttt	tct	cta	cag	cac	aac	480
Gly	Ser	Gly	Gly	Ala	Ile	Ser	Ala	Asp	Ala	Phe	Ser	Leu	Gln	His	Asn	
145				150				155							160	
tat	ctt	ttc	aca	gct	ttt	gaa	gag	aat	tct	tct	aaa	gga	aat	ggc	gga	528
Tyr	Leu	Phe	Thr	Ala	Phe	Glu	Glu	Asn	Ser	Ser	Lys	Gly	Asn	Gly	Gly	
			165					170					175			
gcc	att	cag	gct	caa	acc	ttc	tct	tta	tct	aga	aat	gtg	tcg	cct	att	576
Ala	Ile	Gln	Ala	Gln	Thr	Phe	Ser	Leu	Ser	Arg	Asn	Val	Ser	Pro	Ile	
			180					185					190			
tct	ttc	gcc	cgt	aat	cgt	gcg	gat	tta	aat	ggc	ggc	gct	att	tgc	tgt	624
Ser	Phe	Ala	Arg	Asn	Arg	Ala	Asp	Leu	Asn	Gly	Gly	Ala	Ile	Cys	Cys	
		195					200					205				

agt aat ctt att tgt tca ggg aat gta aac cct ctc ttt ttc act gga	672
Ser Asn Leu Ile Cys Ser Gly Asn Val Asn Pro Leu Phe Phe Thr Gly	
210 215 220	
aac tcc gcc acg aat gga ggc gct att tgt tgt atc agc gat cta aac	720
Asn Ser Ala Thr Asn Gly Gly Ala Ile Cys Cys Ile Ser Asp Leu Asn	
225 230 235 240	
acc tca gaa aaa ggc tct ctc tct ctt gct tgt aac caa gaa acg cta	768
Thr Ser Glu Lys Gly Ser Leu Ser Leu Ala Cys Asn Gln Glu Thr Leu	
245 250 255	
ttt gca agc aat tct gct aaa gaa aaa ggc ggg gct att tat gcc aag	816
Phe Ala Ser Asn Ser Ala Lys Glu Lys Gly Gly Ala Ile Tyr Ala Lys	
260 265 270	
cac atg gta ttg cgt tat aac ggt cct gtt tcc ttc att aac aac agc	864
His Met Val Leu Arg Tyr Asn Gly Pro Val Ser Phe Ile Asn Asn Ser	
275 280 285	
gct aaa ata ggt gga gct atc gcc atc cag tcc gga ggg agt ctc tct	912
Ala Lys Ile Gly Gly Ala Ile Ala Ile Gln Ser Gly Gly Ser Leu Ser	
290 295 300	
atc ctt gca ggt gaa gga tct gtt ctg ttc cag aat aac tcc caa cgc	960
Ile Leu Ala Gly Glu Gly Ser Val Leu Phe Gln Asn Asn Ser Gln Arg	
305 310 315 320	
acc tcc gac caa ggt cta gta aga aac gcc atc tac tta gag aaa gat	1008
Thr Ser Asp Gln Gly Leu Val Arg Asn Ala Ile Tyr Leu Glu Lys Asp	
325 330 335	
gcg att ctt tct tcc tta gaa gct cgc aac gga gat att ctt ttc ttt	1056
Ala Ile Leu Ser Ser Leu Glu Ala Arg Asn Gly Asp Ile Leu Phe Phe	
340 345 350	
gat cct att gta caa gaa agt agc agc aaa gaa tcg cct ctt ccc tcc	1104
Asp Pro Ile Val Gln Glu Ser Ser Ser Lys Glu Ser Pro Leu Pro Ser	
355 360 365	
tct ttg caa gcc agc gtg act tct ccc acc cca gcc acc gca tct cct	1152
Ser Leu Gln Ala Ser Val Thr Ser Pro Thr Pro Ala Thr Ala Ser Pro	
370 375 380	
tta gtt att cag aca agt gca aac cgt tca gtg att ttc tcg agc gaa	1200
Leu Val Ile Gln Thr Ser Ala Asn Arg Ser Val Ile Phe Ser Ser Glu	
385 390 395 400	
cgt ctt tct gaa gaa gaa aaa act cct gat aac ctc act tcc caa cta	1248
Arg Leu Ser Glu Glu Glu Lys Thr Pro Asp Asn Leu Thr Ser Gln Leu	
405 410 415	
cag cag cct atc gaa ctg aaa tcc gga cgc tta gtt tta aaa gat cgc	1296
Gln Gln Pro Ile Glu Leu Lys Ser Gly Arg Leu Val Leu Lys Asp Arg	
420 425 430	

gct gtc ctt tcc gcg cct tct ctc tct cag gat cct caa gct ctc ctc	1344
Ala Val Leu Ser Ala Pro Ser Leu Ser Gln Asp Pro Gln Ala Leu Leu	
435 440 445	
att atg gaa gcg gga act tct tta aaa act tcc tct gat ttg aag tta	1392
Ile Met Glu Ala Gly Thr Ser Leu Lys Thr Ser Ser Asp Leu Lys Leu	
450 455 460	
gct acg cta agt att ccc ctt cat tcc tta gat act gaa aaa agc gta	1440
Ala Thr Leu Ser Ile Pro Leu His Ser Leu Asp Thr Glu Lys Ser Val	
465 470 475 480	
act atc cac gcc cct aac ctt tct atc caa aag atc ttc ctc tct aat	1488
Thr Ile His Ala Pro Asn Leu Ser Ile Gln Lys Ile Phe Leu Ser Asn	
485 490 495	
tct gga gat gag aat ttt tat gaa aat gta gag ctt ctc agt aaa gag	1536
Ser Gly Asp Glu Asn Phe Tyr Glu Asn Val Glu Leu Leu Ser Lys Glu	
500 505 510	
caa aac aat att cct ctc ctt act ctc tct aaa gag caa tct cat tta	1584
Gln Asn Asn Ile Pro Leu Leu Thr Leu Ser Lys Glu Gln Ser His Leu	
515 520 525	
cat ctt cct gat ggg aac ctc tct tct cac ttt gga tat caa gga gat	1632
His Leu Pro Asp Gly Asn Leu Ser Ser His Phe Gly Tyr Gln Gly Asp	
530 535 540	
tgg act ttt tct tgg aaa gat tct gat gaa ggg cat tct ctg att gct	1680
Trp Thr Phe Ser Trp Lys Asp Ser Asp Glu Gly His Ser Leu Ile Ala	
545 550 555 560	
aat tgg acg cct aaa aac tat gtg cct cat cca gaa cgt caa tct aca	1728
Asn Trp Thr Pro Lys Asn Tyr Val Pro His Pro Glu Arg Gln Ser Thr	
565 570 575	
ctc gtt gcg aac act ctt tgg aac acc tat tcc gat atg caa gct gtg	1776
Leu Val Ala Asn Thr Leu Trp Asn Thr Tyr Ser Asp Met Gln Ala Val	
580 585 590	
cag tcg atg att aat aca ata gcg cac gga gga gcc tat cta ttt gga	1824
Gln Ser Met Ile Asn Thr Ile Ala His Gly Gly Ala Tyr Leu Phe Gly	
595 600 605	
acg tgg gga tct gct gtt tct aat tta ttc tat gct cac gac agc tct	1872
Thr Trp Gly Ser Ala Val Ser Asn Leu Phe Tyr Ala His Asp Ser Ser	
610 615 620	
ggg aaa cct atc gat aat tgg cat cat aga agc ctt ggc tac cta ttc	1920
Gly Lys Pro Ile Asp Asn Trp His His Arg Ser Leu Gly Tyr Leu Phe	
625 630 635 640	
ggg atc agt act cac agt tta gat gac cat tct ttc tgc ttg gct gca	1968
Gly Ile Ser Thr His Ser Leu Asp Asp His Ser Phe Cys Leu Ala Ala	
645 650 655	

gga caa tta ctc ggg aaa tcg tcc gat tcc ttt att acg tct aca gaa Gly Gln Leu Leu Gly Lys Ser Ser Asp Ser Phe Ile Thr Ser Thr Glu 660 665 670	2016
acg acc tcc tat ata gct act gta caa gcg caa ctc gct acc tct cta Thr Thr Ser Tyr Ile Ala Thr Val Gln Ala Gln Leu Ala Thr Ser Leu 675 680 685	2064
atg aaa atc tct gca cag gca tgc tac aat gaa agt atc cat gag cta Met Lys Ile Ser Ala Gln Ala Cys Tyr Asn Glu Ser Ile His Glu Leu 690 695 700	2112
aaa aca aaa tat cgc tcc ttc tct aaa gaa gga ttc gga tcc tgg cat Lys Thr Lys Tyr Arg Ser Phe Ser Lys Glu Gly Phe Gly Ser Trp His 705 710 715 720	2160
agc gtt gca gta tcc gga gaa gtg tgc gca tcg att cct att gta tcc Ser Val Ala Val Ser Gly Glu Val Cys Ala Ser Ile Pro Ile Val Ser 725 730 735	2208
aat ggt tcc gga ctg ttc agc tcc ttc tct att ttc tct aaa ctg caa Asn Gly Ser Gly Leu Phe Ser Ser Phe Ser Ile Phe Ser Lys Leu Gln 740 745 750	2256
gga ttt tca gga aca cag gac ggt ttt gag gag agt tcg gga gag att Gly Phe Ser Gly Thr Gln Asp Gly Phe Glu Glu Ser Ser Gly Glu Ile 755 760 765	2304
cgg tcc ttt tct gcc agc tct ttc aga aat att tca ctt cct ata gga Arg Ser Phe Ser Ala Ser Ser Phe Arg Asn Ile Ser Leu Pro Ile Gly 770 775 780	2352
ata aca ttt gaa aaa aaa tcc caa aaa aca cga acc tac tat tac ttt Ile Thr Phe Glu Lys Lys Ser Gln Lys Thr Arg Thr Tyr Tyr Tyr Phe 785 790 795 800	2400
cta gga gcc tac atc caa gac ctg aaa cgt gat gtg gaa tcg gga cct Leu Gly Ala Tyr Ile Gln Asp Leu Lys Arg Asp Val Glu Ser Gly Pro 805 810 815	2448
gta gtg tta ctc aaa aat gcc gtc tcc tgg gat gct cct atg gcg aac Val Val Leu Leu Lys Asn Ala Val Ser Trp Asp Ala Pro Met Ala Asn 820 825 830	2496
ttg gat tca cga gcc tac atg ttc agg ctt acg aat caa aga gct cta Leu Asp Ser Arg Ala Tyr Met Phe Arg Leu Thr Asn Gln Arg Ala Leu 835 840 845	2544
cac aga ctt cag acg ctg tta aat gtg tct tgt gtg ctg cgt ggg caa His Arg Leu Gln Thr Leu Leu Asn Val Ser Cys Val Leu Arg Gly Gln 850 855 860	2592
agc cat agt tac tcc ctg gat ctg ggg acc act tac agg ttc Ser His Ser Tyr Ser Leu Asp Leu Gly Thr Thr Tyr Arg Phe 865 870 875	2634
tag	2637

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 <211> 878
 <212> PRT
 <213> Chlamydia sp

<400> 4

Met	Arg	Pro	Asp	His	Met	Asn	Phe	Cys	Cys	Leu	Cys	Ala	Ala	Ile	Leu
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Ser	Ser	Thr	Ala	Val	Leu	Phe	Gly	Gln	Asp	Pro	Leu	Gly	Glu	Thr	Ala
			20					25					30		
Leu	Leu	Thr	Lys	Asn	Pro	Asn	His	Val	Val	Cys	Thr	Phe	Phe	Glu	Asp
		35				40						45			
Cys	Thr	Met	Glu	Ser	Leu	Phe	Pro	Ala	Leu	Cys	Ala	His	Ala	Ser	Gln
	50					55					60				
Asp	Asp	Pro	Leu	Tyr	Val	Leu	Gly	Asn	Ser	Tyr	Cys	Trp	Phe	Val	Ser
65					70					75					80
Lys	Leu	His	Ile	Thr	Asp	Pro	Lys	Glu	Ala	Leu	Phe	Lys	Glu	Lys	Gly
			85						90					95	
Asp	Leu	Ser	Ile	Gln	Asn	Phe	Arg	Phe	Leu	Ser	Phe	Thr	Asp	Cys	Ser
			100					105					110		
Ser	Lys	Glu	Ser	Ser	Pro	Ser	Ile	Ile	His	Gln	Lys	Asn	Gly	Gln	Leu
		115					120						125		
Ser	Leu	Arg	Asn	Asn	Gly	Ser	Met	Ser	Phe	Cys	Arg	Asn	His	Ala	Glu
	130					135					140				
Gly	Ser	Gly	Gly	Ala	Ile	Ser	Ala	Asp	Ala	Phe	Ser	Leu	Gln	His	Asn
145					150					155					160
Tyr	Leu	Phe	Thr	Ala	Phe	Glu	Glu	Asn	Ser	Ser	Lys	Gly	Asn	Gly	Gly
			165						170					175	
Ala	Ile	Gln	Ala	Gln	Thr	Phe	Ser	Leu	Ser	Arg	Asn	Val	Ser	Pro	Ile
			180					185					190		
Ser	Phe	Ala	Arg	Asn	Arg	Ala	Asp	Leu	Asn	Gly	Gly	Ala	Ile	Cys	Cys
		195					200					205			
Ser	Asn	Leu	Ile	Cys	Ser	Gly	Asn	Val	Asn	Pro	Leu	Phe	Phe	Thr	Gly
	210					215					220				
Asn	Ser	Ala	Thr	Asn	Gly	Gly	Ala	Ile	Cys	Cys	Ile	Ser	Asp	Leu	Asn
225					230					235					240
Thr	Ser	Glu	Lys	Gly	Ser	Leu	Ser	Leu	Ala	Cys	Asn	Gln	Glu	Thr	Leu
			245						250					255	
Phe	Ala	Ser	Asn	Ser	Ala	Lys	Glu	Lys	Gly	Gly	Ala	Ile	Tyr	Ala	Lys
			260					265					270		
His	Met	Val	Leu	Arg	Tyr	Asn	Gly	Pro	Val	Ser	Phe	Ile	Asn	Asn	Ser
		275					280					285			
Ala	Lys	Ile	Gly	Gly	Ala	Ile	Ala	Ile	Gln	Ser	Gly	Gly	Ser	Leu	Ser
	290					295					300				
Ile	Leu	Ala	Gly	Glu	Gly	Ser	Val	Leu	Phe	Gln	Asn	Asn	Ser	Gln	Arg
305					310					315					320
Thr	Ser	Asp	Gln	Gly	Leu	Val	Arg	Asn	Ala	Ile	Tyr	Leu	Glu	Lys	Asp
			325						330					335	
Ala	Ile	Leu	Ser	Ser	Leu	Glu	Ala	Arg	Asn	Gly	Asp	Ile	Leu	Phe	Phe
			340					345					350		
Asp	Pro	Ile	Val	Gln	Glu	Ser	Ser	Ser	Lys	Glu	Ser	Pro	Leu	Pro	Ser
		355					360					365			
Ser	Leu	Gln	Ala	Ser	Val	Thr	Ser	Pro	Thr	Pro	Ala	Thr	Ala	Ser	Pro
	370					375					380				
Leu	Val	Ile	Gln	Thr	Ser	Ala	Asn	Arg	Ser	Val	Ile	Phe	Ser	Ser	Glu
385					390					395					400
Arg	Leu	Ser	Glu	Glu	Glu	Lys	Thr	Pro	Asp	Asn	Leu	Thr	Ser	Gln	Leu
				405					410					415	

Gln	Gln	Pro	Ile	Glu	Leu	Lys	Ser	Gly	Arg	Leu	Val	Leu	Lys	Asp	Arg
			420					425					430		
Ala	Val	Leu	Ser	Ala	Pro	Ser	Leu	Ser	Gln	Asp	Pro	Gln	Ala	Leu	Leu
		435					440					445			
Ile	Met	Glu	Ala	Gly	Thr	Ser	Leu	Lys	Thr	Ser	Ser	Asp	Leu	Lys	Leu
	450					455					460				
Ala	Thr	Leu	Ser	Ile	Pro	Leu	His	Ser	Leu	Asp	Thr	Glu	Lys	Ser	Val
465					470					475					480
Thr	Ile	His	Ala	Pro	Asn	Leu	Ser	Ile	Gln	Lys	Ile	Phe	Leu	Ser	Asn
			485					490						495	
Ser	Gly	Asp	Glu	Asn	Phe	Tyr	Glu	Asn	Val	Glu	Leu	Leu	Ser	Lys	Glu
		500					505					510			
Gln	Asn	Asn	Ile	Pro	Leu	Leu	Thr	Leu	Ser	Lys	Glu	Gln	Ser	His	Leu
	515						520					525			
His	Leu	Pro	Asp	Gly	Asn	Leu	Ser	Ser	His	Phe	Gly	Tyr	Gln	Gly	Asp
	530				535						540				
Trp	Thr	Phe	Ser	Trp	Lys	Asp	Ser	Asp	Glu	Gly	His	Ser	Leu	Ile	Ala
545					550					555					560
Asn	Trp	Thr	Pro	Lys	Asn	Tyr	Val	Pro	His	Pro	Glu	Arg	Gln	Ser	Thr
			565					570						575	
Leu	Val	Ala	Asn	Thr	Leu	Trp	Asn	Thr	Tyr	Ser	Asp	Met	Gln	Ala	Val
		580					585						590		
Gln	Ser	Met	Ile	Asn	Thr	Ile	Ala	His	Gly	Gly	Ala	Tyr	Leu	Phe	Gly
		595					600					605			
Thr	Trp	Gly	Ser	Ala	Val	Ser	Asn	Leu	Phe	Tyr	Ala	His	Asp	Ser	Ser
	610					615					620				
Gly	Lys	Pro	Ile	Asp	Asn	Trp	His	His	Arg	Ser	Leu	Gly	Tyr	Leu	Phe
625					630					635					640
Gly	Ile	Ser	Thr	His	Ser	Leu	Asp	Asp	His	Ser	Phe	Cys	Leu	Ala	Ala
			645					650						655	
Gly	Gln	Leu	Leu	Gly	Lys	Ser	Ser	Asp	Ser	Phe	Ile	Thr	Ser	Thr	Glu
		660					665							670	
Thr	Thr	Ser	Tyr	Ile	Ala	Thr	Val	Gln	Ala	Gln	Leu	Ala	Thr	Ser	Leu
		675					680					685			
Met	Lys	Ile	Ser	Ala	Gln	Ala	Cys	Tyr	Asn	Glu	Ser	Ile	His	Glu	Leu
	690					695					700				
Lys	Thr	Lys	Tyr	Arg	Ser	Phe	Ser	Lys	Glu	Gly	Phe	Gly	Ser	Trp	His
705					710					715					720
Ser	Val	Ala	Val	Ser	Gly	Glu	Val	Cys	Ala	Ser	Ile	Pro	Ile	Val	Ser
			725					730						735	
Asn	Gly	Ser	Gly	Leu	Phe	Ser	Ser	Phe	Ser	Ile	Phe	Ser	Lys	Leu	Gln
		740					745						750		
Gly	Phe	Ser	Gly	Thr	Gln	Asp	Gly	Phe	Glu	Glu	Ser	Ser	Gly	Glu	Ile
		755					760					765			
Arg	Ser	Phe	Ser	Ala	Ser	Ser	Phe	Arg	Asn	Ile	Ser	Leu	Pro	Ile	Gly
	770					775						780			
Ile	Thr	Phe	Glu	Lys	Lys	Ser	Gln	Lys	Thr	Arg	Thr	Tyr	Tyr	Tyr	Phe
785					790					795					800
Leu	Gly	Ala	Tyr	Ile	Gln	Asp	Leu	Lys	Arg	Asp	Val	Glu	Ser	Gly	Pro
			805						810					815	
Val	Val	Leu	Leu	Lys	Asn	Ala	Val	Ser	Trp	Asp	Ala	Pro	Met	Ala	Asn
		820						825					830		
Leu	Asp	Ser	Arg	Ala	Tyr	Met	Phe	Arg	Leu	Thr	Asn	Gln	Arg	Ala	Leu
		835					840					845			
His	Arg	Leu	Gln	Thr	Leu	Leu	Asn	Val	Ser	Cys	Val	Leu	Arg	Gly	Gln
	850					855					860				
Ser	His	Ser	Tyr	Ser	Leu	Asp	Leu	Gly	Thr	Thr	Tyr	Arg	Phe		
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 Thr Gly Asp Thr His Asn Leu Thr Asn Cys
 35 40

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 <212> PRT
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 20 25 30
 Thr Gly Asp Thr His Asn Leu Thr Asn Cys Tyr Leu Asp Asn Leu Arg
 35 40 45
 Tyr Ile Leu Ala Ile Leu Gln Lys Thr Pro Asn Glu Gly Ala Ala Val
 50 55 60
 Thr Ile Thr Asp Tyr Leu Ser Phe Phe Asp Thr Gln Lys Glu Gly Ile
 65 70 75 80
 Tyr Phe Ala Lys Asn Leu Thr Pro Glu Ser Gly Gly Ala Ile Gly Tyr
 85 90 95
 Ala Ser Pro Asn Ser Pro Thr Val Glu Ile Arg
 100 105

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 <211> 81
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 <213> Chlamydia sp

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 Leu Arg Tyr Ile Leu Ala Ile Leu Gln Lys Thr Pro Asn Glu Gly Ala
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 Ala Val Thr Ile Thr Asp Tyr Leu Ser Phe Phe Asp Thr Gln Lys Glu
 35 40 45
 Gly Ile Tyr Phe Ala Lys Asn Leu Thr Pro Glu Ser Gly Gly Ala Ile
 50 55 60
 Gly Tyr Ala Ser Pro Asn Ser Pro Thr Val Glu Ile Arg Asp Thr Ile
 65 70 75 80
 Gly

<210> 8
 <211> 66
 <212> PRT
 <213> Chlamydia sp

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 20 25 30
 His Ala Gln Asn Leu Tyr Ile Asn His Asn His Asp Val Val Gly Phe
 35 40 45
 Met Lys Asn Phe Ser Tyr Val Arg Gly Gly Ala Ile Ser Thr Ala Asn
 50 55 60
 Thr Phe
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 Thr Ala Gly Lys Gly Gly Ala Ile Tyr Ala Gly Thr Ser Asn Ser Phe
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 Glu Ser Asn Asn Cys Asp Leu Phe Ile Asn Asn Ala Cys Cys Ala
 35 40 45
 Gly Gly Ala Ile Phe Ser Pro Ile Cys Ser Leu Thr Gly Asn Arg Gly
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 Asn Ile Val
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 Lys Asn Tyr Gly Gly Ala Ile Tyr Ala Pro Val Val Thr Leu Val Asp
 35 40 45
 Asn Gly Pro Thr Tyr Phe Ile Asn Asn Ile Ala Asn Asn Lys Gly Gly
 50 55 60
 Ala Ile Tyr Ile Asp Gly Thr Ser Asn Ser Lys Ile Ser Ala Asp Arg
 65 70 75 80
 His Ala Ile Ile Phe Asn Glu Asn Ile Val Thr Asn
 85 90

<210> 11
 <211> 66
 <212> PRT
 <213> Chlamydia sp

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 20 25 30

Tyr Asp Pro Ile Glu Val Ser Asn Ala Gly Val Ser Val Ser Phe Asn
 35 40 45
 Lys Glu Ala Asp Gln Thr Gly Ser Val Val Phe Ser Gly Ala Thr Val
 50 55 60
 Asn Ser
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 <211> 51
 <212> PRT
 <213> Chlamydia sp

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 Leu Thr Leu Ser Asn Gly Phe Leu Cys Ile Glu Asp His Ala Gln Leu
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 Thr Val Asn Arg Phe Thr Gln Thr Gly Gly Val Val Ser Leu Gly Asn
 35 40 45
 Gly Ala Val
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 <212> PRT
 <213> Chlamydia sp

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 Glu Ile Pro Leu Leu Trp Val Glu Pro Thr Asn Asn Ser Asn Asn Tyr
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 Thr Ala Asp Thr Ala Ala Thr Phe Ser Leu Ser Asp Val Lys Leu Ser
 20 25 30
 Leu Ile Asp Asp Tyr Gly Asn Ser Pro Tyr Glu Ser Thr Asp Leu Thr
 35 40 45
 His Ala Leu Ser Ser Gln Pro Met Leu Ser Ile Ser Glu Ala Ser Asp
 50 55 60
 Asn Gln
 65

<210> 14
 <211> 36
 <212> PRT
 <213> Chlamydia sp

<400> 14
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 1 5 10 15
 Tyr Gly Trp Gln Gly Leu Trp Thr Trp Gly Trp Ala Lys Thr Gln Asp
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 Pro Glu Pro Ala
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<210> 15
 <211> 36
 <212> PRT
 <213> Chlamydia sp

<400> 15

Gly Trp Ala Lys Thr Gln Asp Pro Glu Pro Ala Ser Ser Ala Thr Ile
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 Thr Asp Pro Gln Lys Ala Asn Arg Phe His Arg Thr Leu Leu Thr
 20 25 30
 Trp Leu Pro Ala
 35

<210> 16
 <211> 76
 <212> PRT
 <213> Chlamydia sp

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 Arg Thr Leu Leu Leu Thr Trp Leu Pro Ala Gly Tyr Val Pro Ser Pro
 20 25 30
 Lys His Arg Ser Pro Leu Ile Ala Asn Thr Leu Trp Gly Asn Met Leu
 35 40 45
 Leu Ala Thr Glu Ser Leu Lys Asn Ser Ala Glu Leu Thr Pro Ser Asp
 50 55 60
 His Pro Phe Trp Gly Ile Thr Gly Gly Gly Leu Gly
 65 70 75

<210> 17
 <211> 76
 <212> PRT
 <213> Chlamydia sp

<400> 17
 Met Ile Ala Gly Gln Thr His Thr Phe Ser Leu Lys Phe Ser Gln Thr
 1 5 10 15
 Tyr Thr Lys Leu Asn Glu Arg Tyr Ala Lys Asn Asn Val Ser Ser Lys
 20 25 30
 Asn Tyr Ser Cys Gln Gly Glu Met Leu Phe Ser Leu Gln Glu Gly Phe
 35 40 45
 Leu Leu Thr Lys Leu Val Gly Leu Tyr Ser Tyr Gly Asp His Asn Cys
 50 55 60
 His His Phe Tyr Thr Gln Gly Glu Asn Leu Thr Ser
 65 70 75

<210> 18
 <211> 21
 <212> PRT
 <213> Chlamydia sp

<400> 18
 Ser Lys Asn Tyr Ser Cys Gln Gly Glu Met Leu Phe Ser Leu Gln Glu
 1 5 10 15
 Gly Phe Leu Leu Thr
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<210> 19
 <211> 61
 <212> PRT
 <213> Chlamydia sp

<400> 19

Asp His Asn Cys His His Phe Tyr Thr Gln Gly Glu Asn Leu Thr Ser
 1 5 10 15
 Gln Gly Thr Phe Arg Ser Gln Thr Met Gly Gly Ala Val Phe Phe Asp
 20 25 30
 Leu Pro Met Lys Pro Phe Gly Ser Thr His Ile Leu Thr Ala Pro Phe
 35 40 45
 Leu Gly Ala Leu Gly Ile Tyr Ser Ser Leu Ser His Phe
 50 55 60

<210> 20
 <211> 51
 <212> PRT
 <213> Chlamydia sp

<400> 20
 Phe Asp Leu Pro Met Lys Pro Phe Gly Ser Thr His Ile Leu Thr Ala
 1 5 10 15
 Pro Phe Leu Gly Ala Leu Gly Ile Tyr Ser Ser Leu Ser His Phe Thr
 20 25 30
 Glu Val Gly Ala Tyr Pro Arg Ser Phe Ser Thr Lys Thr Pro Leu Ile
 35 40 45
 Asn Val Leu
 50

<210> 21
 <211> 31
 <212> PRT
 <213> Chlamydia sp

<400> 21
 Met Lys Lys Ala Phe Phe Phe Phe Leu Ile Gly Asn Ser Leu Ser Gly
 1 5 10 15
 Leu Ala Arg Glu Val Pro Ser Arg Ile Phe Leu Met Pro Asn Ser
 20 25 30

<210> 22
 <211> 500
 <212> PRT
 <213> Chlamydia sp

<400> 22
 Met Lys Lys Ala Phe Phe Phe Phe Leu Ile Gly Asn Ser Leu Ser Gly
 1 5 10 15
 Leu Ala Arg Glu Val Pro Ser Arg Ile Phe Leu Met Pro Asn Ser Val
 20 25 30
 Pro Asp Pro Thr Lys Glu Ser Leu Ser Asn Lys Ile Ser Leu Thr Gly
 35 40 45
 Asp Thr His Asn Leu Thr Asn Cys Tyr Leu Asp Asn Leu Arg Tyr Ile
 50 55 60
 Leu Ala Ile Leu Gln Lys Thr Pro Asn Glu Gly Ala Ala Val Thr Ile
 65 70 75 80
 Thr Asp Tyr Leu Ser Phe Phe Asp Thr Gln Lys Glu Gly Ile Tyr Phe
 85 90 95
 Ala Lys Asn Leu Thr Pro Glu Ser Gly Gly Ala Ile Gly Tyr Ala Ser
 100 105 110
 Pro Asn Ser Pro Thr Val Glu Ile Arg Asp Thr Ile Gly Pro Val Ile
 115 120 125

Gly Glu Thr Ala Leu Leu Thr Lys Asn Pro Asn His
 20 25

<210> 24
 <211> 41
 <212> PRT
 <213> Chlamydia sp

<400> 24
 Val Leu Gly Asn Ser Tyr Cys Trp Phe Val Ser Lys Leu His Ile Thr
 1 5 10 15
 Asp Pro Lys Glu Ala Leu Phe Lys Glu Lys Gly Asp Leu Ser Ile Gln
 20 25 30
 Asn Phe Arg Phe Leu Ser Phe Thr Asp
 35 40

<210> 25
 <211> 76
 <212> PRT
 <213> Chlamydia sp

<400> 25
 Ile Ser Ala Asp Ala Phe Ser Leu Gln His Asn Tyr Leu Phe Thr Ala
 1 5 10 15
 Phe Glu Glu Asn Ser Ser Lys Gly Asn Gly Gly Ala Ile Gln Ala Gln
 20 25 30
 Thr Phe Ser Leu Ser Arg Asn Val Ser Pro Ile Ser Phe Ala Arg Asn
 35 40 45
 Arg Ala Asp Leu Asn Gly Gly Ala Ile Cys Cys Ser Asn Leu Ile Cys
 50 55 60
 Ser Gly Asn Val Asn Pro Leu Phe Phe Thr Gly Asn
 65 70 75

<210> 26
 <211> 41
 <212> PRT
 <213> Chlamydia sp

<400> 26
 Ala Cys Asn Gln Glu Thr Leu Phe Ala Ser Asn Ser Ala Lys Glu Lys
 1 5 10 15
 Gly Gly Ala Ile Tyr Ala Lys His Met Val Leu Arg Tyr Asn Gly Pro
 20 25 30
 Val Ser Phe Ile Asn Asn Ser Ala Lys
 35 40

<210> 27
 <211> 86
 <212> PRT
 <213> Chlamydia sp

<400> 27
 Leu Gln Ala Ser Val Thr Ser Pro Thr Pro Ala Thr Ala Ser Pro Leu
 1 5 10 15
 Val Ile Gln Thr Ser Ala Asn Arg Ser Val Ile Phe Ser Ser Glu Arg
 20 25 30
 Leu Ser Glu Glu Glu Lys Thr Pro Asp Asn Leu Thr Ser Gln Leu Gln
 35 40 45

Gln Pro Ile Glu Leu Lys Ser Gly Arg Leu Val Leu Lys Asp Arg Ala
 50 55 60
 Val Leu Ser Ala Pro Ser Leu Ser Gln Asp Pro Gln Ala Leu Leu Ile
 65 70 75 80
 Met Glu Ala Gly Thr Ser
 85

<210> 28
 <211> 56
 <212> PRT
 <213> Chlamydia sp

<400> 28
 Glu Arg Leu Ser Glu Glu Glu Lys Thr Pro Asp Asn Leu Thr Ser Gln
 1 5 10 15
 Leu Gln Gln Pro Ile Glu Leu Lys Ser Gly Arg Leu Val Leu Lys Asp
 20 25 30
 Arg Ala Val Leu Ser Ala Pro Ser Leu Ser Gln Asp Pro Gln Ala Leu
 35 40 45
 Leu Ile Met Glu Ala Gly Thr Ser
 50 55

<210> 29
 <211> 51
 <212> PRT
 <213> Chlamydia sp

<400> 29
 Pro Leu His Ser Leu Asp Thr Glu Lys Ser Val Thr Ile His Ala Pro
 1 5 10 15
 Asn Leu Ser Ile Gln Lys Ile Phe Leu Ser Asn Ser Gly Asp Glu Asn
 20 25 30
 Phe Tyr Glu Asn Val Glu Leu Leu Ser Lys Glu Gln Asn Asn Ile Pro
 35 40 45
 Leu Leu Thr
 50

<210> 30
 <211> 56
 <212> PRT
 <213> Chlamydia sp

<400> 30
 Ser Asn Leu Phe Tyr Ala His Asp Ser Ser Gly Lys Pro Ile Asp Asn
 1 5 10 15
 Trp His His Arg Ser Leu Gly Tyr Leu Phe Gly Ile Ser Thr His Ser
 20 25 30
 Leu Asp Asp His Ser Phe Cys Leu Ala Ala Gly Gln Leu Leu Gly Lys
 35 40 45
 Ser Ser Asp Ser Phe Ile Thr Ser
 50 55

<210> 31
 <211> 66
 <212> PRT
 <213> Chlamydia sp

<400> 31

Ser Phe Ser Lys Glu Gly Phe Gly Ser Trp His Ser Val Ala Val Ser
 1 5 10 15
 Gly Glu Val Cys Ala Ser Ile Pro Ile Val Ser Asn Gly Ser Gly Leu
 20 25 30
 Phe Ser Ser Phe Ser Ile Phe Ser Lys Leu Gln Gly Phe Ser Gly Thr
 35 40 45
 Gln Asp Gly Phe Glu Glu Ser Ser Gly Glu Ile Arg Ser Phe Ser Ala
 50 55 60
 Ser Ser
 65

<210> 32
 <211> 61
 <212> PRT
 <213> Chlamydia sp

<400> 32
 Ser Gly Glu Ile Arg Ser Phe Ser Ala Ser Ser Phe Arg Asn Ile Ser
 1 5 10 15
 Leu Pro Ile Gly Ile Thr Phe Glu Lys Lys Ser Gln Lys Thr Arg Thr
 20 25 30
 Tyr Tyr Tyr Phe Leu Gly Ala Tyr Ile Gln Asp Leu Lys Arg Asp Val
 35 40 45
 Glu Ser Gly Pro Val Val Leu Leu Lys Asn Ala Val Ser
 50 55 60

<210> 33
 <211> 31
 <212> PRT
 <213> Chlamydia sp

<400> 33
 Met Ala Asn Leu Asp Ser Arg Ala Tyr Met Phe Arg Leu Thr Asn Gln
 1 5 10 15
 Arg Ala Leu His Arg Leu Gln Thr Leu Leu Asn Val Ser Cys Val
 20 25 30

<210> 34
 <211> 500
 <212> PRT
 <213> Chlamydia sp

<400> 34
 Met Arg Pro Asp His Met Asn Phe Cys Cys Leu Cys Ala Ala Ile Leu
 1 5 10 15
 Ser Ser Thr Ala Val Leu Phe Gly Gln Asp Pro Leu Gly Glu Thr Ala
 20 25 30
 Leu Leu Thr Lys Asn Pro Asn His Val Val Cys Thr Phe Phe Glu Asp
 35 40 45
 Cys Thr Met Glu Ser Leu Phe Pro Ala Leu Cys Ala His Ala Ser Gln
 50 55 60
 Asp Asp Pro Leu Tyr Val Leu Gly Asn Ser Tyr Cys Trp Phe Val Ser
 65 70 75 80
 Lys Leu His Ile Thr Asp Pro Lys Glu Ala Leu Phe Lys Glu Lys Gly
 85 90 95
 Asp Leu Ser Ile Gln Asn Phe Arg Phe Leu Ser Phe Thr Asp Cys Ser
 100 105 110

Ser	Lys	Glu	Ser	Ser	Pro	Ser	Ile	Ile	His	Gln	Lys	Asn	Gly	Gln	Leu
		115					120					125			
Ser	Leu	Arg	Asn	Asn	Gly	Ser	Met	Ser	Phe	Cys	Arg	Asn	His	Ala	Glu
	130				135						140				
Gly	Ser	Gly	Gly	Ala	Ile	Ser	Ala	Asp	Ala	Phe	Ser	Leu	Gln	His	Asn
145					150					155					160
Tyr	Leu	Phe	Thr	Ala	Phe	Glu	Glu	Asn	Ser	Ser	Lys	Gly	Asn	Gly	Gly
				165				170						175	
Ala	Ile	Gln	Ala	Gln	Thr	Phe	Ser	Leu	Ser	Arg	Asn	Val	Ser	Pro	Ile
			180					185					190		
Ser	Phe	Ala	Arg	Asn	Arg	Ala	Asp	Leu	Asn	Gly	Gly	Ala	Ile	Cys	Cys
	195					200						205			
Ser	Asn	Leu	Ile	Cys	Ser	Gly	Asn	Val	Asn	Pro	Leu	Phe	Phe	Thr	Gly
	210					215					220				
Asn	Ser	Ala	Thr	Asn	Gly	Gly	Ala	Ile	Cys	Cys	Ile	Ser	Asp	Leu	Asn
225					230					235					240
Thr	Ser	Glu	Lys	Gly	Ser	Leu	Ser	Leu	Ala	Cys	Asn	Gln	Glu	Thr	Leu
				245					250					255	
Phe	Ala	Ser	Asn	Ser	Ala	Lys	Glu	Lys	Gly	Gly	Ala	Ile	Tyr	Ala	Lys
			260					265					270		
His	Met	Val	Leu	Arg	Tyr	Asn	Gly	Pro	Val	Ser	Phe	Ile	Asn	Asn	Ser
		275				280						285			
Ala	Lys	Ile	Gly	Gly	Ala	Ile	Ala	Ile	Gln	Ser	Gly	Gly	Ser	Leu	Ser
	290					295					300				
Ile	Leu	Ala	Gly	Glu	Gly	Ser	Val	Leu	Phe	Gln	Asn	Asn	Ser	Gln	Arg
305					310					315					320
Thr	Ser	Asp	Gln	Gly	Leu	Val	Arg	Asn	Ala	Ile	Tyr	Leu	Glu	Lys	Asp
				325					330					335	
Ala	Ile	Leu	Ser	Ser	Leu	Glu	Ala	Arg	Asn	Gly	Asp	Ile	Leu	Phe	Phe
			340					345					350		
Asp	Pro	Ile	Val	Gln	Glu	Ser	Ser	Ser	Lys	Glu	Ser	Pro	Leu	Pro	Ser
		355					360					365			
Ser	Leu	Gln	Ala	Ser	Val	Thr	Ser	Pro	Thr	Pro	Ala	Thr	Ala	Ser	Pro
	370					375					380				
Leu	Val	Ile	Gln	Thr	Ser	Ala	Asn	Arg	Ser	Val	Ile	Phe	Ser	Ser	Glu
385					390					395					400
Arg	Leu	Ser	Glu	Glu	Glu	Lys	Thr	Pro	Asp	Asn	Leu	Thr	Ser	Gln	Leu
				405					410					415	
Gln	Gln	Pro	Ile	Glu	Leu	Lys	Ser	Gly	Arg	Leu	Val	Leu	Lys	Asp	Arg
			420					425					430		
Ala	Val	Leu	Ser	Ala	Pro	Ser	Leu	Ser	Gln	Asp	Pro	Gln	Ala	Leu	Leu
	435						440					445			
Ile	Met	Glu	Ala	Gly	Thr	Ser	Leu	Lys	Thr	Ser	Ser	Asp	Leu	Lys	Leu
	450					455					460				
Ala	Thr	Leu	Ser	Ile	Pro	Leu	His	Ser	Leu	Asp	Thr	Glu	Lys	Ser	Val
465					470					475					480
Thr	Ile	His	Ala	Pro	Asn	Leu	Ser	Ile	Gln	Lys	Ile	Phe	Leu	Ser	Asn
				485					490					495	
Ser	Gly	Asp	Glu												
			500												

<210> 35
 <211> 10
 <212> PRT
 <213> Chlamydia sp

 <400> 35

Val Pro Asp Pro Thr Lys Glu Ser Leu Ser
1 5 10

<210> 36
<211> 126
<212> DNA
<213> Chlamydia sp

<400> 36
tcaggactag ctagagaggt tccttctaga atctttctta tgcccaactc agttccagat 60
cctacgaaag agtcgctatc aaataaaaatt agtttgacag gagacactca caatctcact 120
aactgc 126

<210> 37
<211> 321
<212> DNA
<213> Chlamydia sp

<400> 37
tcaggactag ctagagaggt tccttctaga atctttctta tgcccaactc agttccagat 60
cctacgaaag agtcgctatc aaataaaaatt agtttgacag gagacactca caatctcact 120
aactgctatc tcgataacct acgctacata ctggctattc tacaaaaaac tcccaatgaa 180
ggagctgctg tcacaataac agattaccta agcttttttg atacacaaaa agaaggtatt 240
tattttgcaa aaaatctcac ccctgaaagt ggtggtgcga ttggttatgc gagtcccaat 300
tctcctaccg tggagattcg t 321

<210> 38
<211> 243
<212> DNA
<213> Chlamydia sp

<400> 38
agtttgacag gagacactca caatctcact aactgctatc tcgataacct acgctacata 60
ctggctattc tacaaaaaac tcccaatgaa ggagctgctg tcacaataac agattaccta 120
agcttttttg atacacaaaa agaaggtatt tattttgcaa aaaatctcac ccctgaaagt 180
ggtggtgcga ttggttatgc gagtcccaat tctcctaccg tggagattcg tgatacaata 240
ggt 243

<210> 39
<211> 198
<212> DNA
<213> Chlamydia sp

<400> 39
ggtcctgtaa tctttgaaaa taatacttgt tgcagaccat ttacatcgag taatcctaata 60
gcagctgtta ataaaaataag agaaggcgga gccattcatg ctcaaaatct ttacataaat 120
cataatcatg atgtggtcgg atttatgaag aacttttctt atgtccgagg aggagccatt 180
agtaccgcta ataccttt 198

<210> 40
<211> 201
<212> DNA
<213> Chlamydia sp

<400> 40
aatcagtcctt gttttctctt tatggacaac atctgtattc aaactaatac agcaggaaaa 60
ggtggcgcta tctatgctgg aacgagcaat tcttttgaga gtaataactg cgatctcttc 120
tttatcaata acgcctgttg tgcaggagga gcatctctt cccctatctg ttctctaaca 180

ggaaatcgtg gtaacatcgt t

201

<210> 41
<211> 276
<212> DNA
<213> Chlamydia sp

<400> 41
tcttcagaag cttctgatgg aggagcaatt aaagtaacta ctgcgctaga tggtacaggc 60
aatcgtggta ggatcttttt tagtgacaat atcacaaaaa attatggcgg agctattttac 120
gtcctctgtag ttaccctagt ggataatggc cctacctact ttataaaciaa tatcgccaat 180
aataaggggg gcgctatcta tatagacgga accagcaact ccaaaaatttc tgccgaccgc 240
catgctatta tttttaatga aaatattgtg actaat 276

<210> 42
<211> 198
<212> DNA
<213> Chlamydia sp

<400> 42
acgtcagcta atcctcctag aagaaatgca ataacagtag caagctcctc tgggtgaaatt 60
ctattaggag cagggagtag ccaaaattta attttttatg atcctattga agttagcaat 120
gcaggggtct ctgtgtcctt caataaggaa gctgatcaaa caggctctgt agtattttca 180
ggagctactg ttaattct 198

<210> 43
<211> 153
<212> DNA
<213> Chlamydia sp

<400> 43
tctgcagatt ttcattcaacg caatttaciaa acaaaaaaac ctgcacccct tactctcagt 60
aatgggttttc tatgtatcga agatcatgct cagcttacag tgaatcgatt cacacaaact 120
gggggtgttg tttctcttgg gaatggagca gtt 153

<210> 44
<211> 198
<212> DNA
<213> Chlamydia sp

<400> 44
gagattcctt tattgtgggt agagcctaca aataacagca ataactatac agcagatact 60
gcagctacct tttcattaag tgatgtaaaa ctctcactca ttgatgacta tgggaattct 120
ccttatgaat ccacagatct aacccatgct ctgtcatcac agcctatgct atctatttct 180
gaggctagtg ataaccag 198

<210> 45
<211> 108
<212> DNA
<213> Chlamydia sp

<400> 45
cagctaagat ctgatgatat ggatttttctg ggactaaatg tccctcatta tggatggcaa 60
ggactttgga cttgggggctg ggcaaaaact caagatccag aaccagca 108

<210> 46
<211> 108
<212> DNA

<213> Chlamydia sp

<400> 46

ggctgggcaa aaactcaaga tccagaacca gcatcttcag caacaatcac agatccacaa	60
aaagccaata gattccatag aaccttatta ctgacttggc ttcctgct	108

<210> 47

<211> 228

<212> DNA

<213> Chlamydia sp

<400> 47

gcatcttcag caacaatcac agatccacaa aaagccaata gattccatag aaccttatta	60
ctgacttggc ttcctgctgg gtatgttcct agcccgaac acagaagtcc cctcatagcg	120
aataccttat gggggaatat gctgcttgca acagaaagct taaaaaatag tgcagaactg	180
acacctagt atcatccttt ctggggaatt acaggaggag gactaggc	228

<210> 48

<211> 228

<212> DNA

<213> Chlamydia sp

<400> 48

atgatagcag ggcagacaca caccttctca ttgaaattca gtcagaccta caccaaactc	60
aatgagcggt acgcaaaaaa caacgtatct tctaaaaatt actcatgccca aggagaaatg	120
ctcttctcat tgcaagaagg tttcttgctg actaaattag ttgggcttta cagctatgga	180
gaccataact gtcaccattt ctatacccaa ggagaaaatc taacatct	228

<210> 49

<211> 63

<212> DNA

<213> Chlamydia sp

<400> 49

tctaaaaatt actcatgccca aggagaaatg ctcttctcat tgcaagaagg tttcttgctg	60
act	63

<210> 50

<211> 183

<212> DNA

<213> Chlamydia sp

<400> 50

gaccataact gtcaccattt ctatacccaa ggagaaaatc taacatctca agggacgttc	60
cgtagtcaaa cgatgggagg tgctgttttt tttgatctcc ctatgaaacc ctttggatca	120
acgcatatac tgacagctcc ctttttaggt gctcttggtta tttattctag cctgtctcac	180
ttt	183

<210> 51

<211> 153

<212> DNA

<213> Chlamydia sp

<400> 51

tttgatctcc ctatgaaacc ctttggatca acgcatatac tgacagctcc ctttttaggt	60
gctcttggtta tttattctag cctgtctcac tttactgagg tgggagccta tccgcgaagc	120
ttttctacaa agactccttt gatcaatgtc cta	153

<210> 52
 <211> 93
 <212> DNA
 <213> Chlamydia sp

<400> 52
 atgaaaaaag cgttttttctt tttccttatt ggaaaactccc tatcaggact agctagagag 60
 gttccttcta gaatctttct tatgccaac tca 93

<210> 53
 <211> 1500
 <212> DNA
 <213> Chlamydia sp

<400> 53
 atgaaaaaag cgttttttctt tttccttatt ggaaaactccc tatcaggact agctagagag 60
 gttccttcta gaatctttct tatgccaac tcagttccag atcctacgaa agagtcgcta 120
 tcaaataaaa ttagtttgac aggagacact cacaatctca ctaactgcta tctcgataac 180
 ctacgctaca tactggctat tctacaaaaa actcccaatg aaggagctgc tgtcacaata 240
 acagattacc taagcttttt tgatacacia aaagaaggta tttattttgc aaaaaatctc 300
 acccctgaaa gtggtggtgc gattgggtat gcgagtccca attctcctac cgtggagatt 360
 cgtgatacaa taggtcctgt aatctttgaa aataataactt gttgcagacc atttacatcg 420
 agtaatccta atgcagctgt taataaaata agagaaggcg gagccattca tgcacaaaat 480
 ctttacataa atcataatca tgatgtggtc ggatttatga agaacttttc ttatgtccga 540
 ggaggagcca ttagtaccgc taataccttt gttgtgagcg agaatacagtc ttgttttctc 600
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 ggaacgagca attcttttga gagtaataac tgcgatctct tctttatcaa taacgcctgt 720
 tgtgcaggag gagcgatctt ctcccctatc tgttctctaa caggaaatcg tggtaacatc 780
 gttttctata acaatcgctg ctttaaaaaat gtagaaacag cttcttcaga agcttctgat 840
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 gtggataatg gccctaccta ctttataaac aatatcgcca ataataaggg gggcgctatc 1020
 tatatagacg gaaccagcaa ctccaaaatt tctgccgacc gccatgctat ttttttaat 1080
 gaaaatattg tgactaatgt aactaatgca aatggtacca gtacgtcagc taatcctcct 1140
 agaagaaatg caataacagt agcaagctcc tctggtgaaa ttctattagg agcagggagt 1200
 agccaaaatt taatttttta tgatcctatt gaagttagca atgcaggggt ctctgtgtcc 1260
 ttcaataagg aagctgatca aacaggctct gtagtatttt caggagctac tgttaattct 1320
 gcagattttc atcaacgcaa tttacaaaca aaaacacctg cacccttac tctcagtaat 1380
 ggttttctat gtatcgaaga tcatgctcag cttacagtga atcgattcac acaaactggg 1440
 ggtgttggtt ctcttgggaa tggagcagtt ctgagttgct ataaaaatgg tgcaggaat 1500

<210> 54
 <211> 84
 <212> DNA
 <213> Chlamydia sp

<400> 54
 gctgctatatt tgtcatccac agcggctctc tttggccagg atcccttagg tgaaaccgcc 60
 ctctcacta aaaatcctaa tcat 84

<210> 55
 <211> 123
 <212> DNA
 <213> Chlamydia sp

<400> 55
 gtacttgga attcctactg ttggttcgta tctaaactcc atatcacgga ccccaaagag 60
 gctcttttta aagaaaaagg agatctttcc attcaaaact ttcgcttcct ttccttcaca 120

123

<400> 56

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<210> 57
<211> 123
<212> DNA
<213> Chlamydia sp
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<400> 57

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<210> 58
<211> 258
<212> DNA
<213> Chlamydia sp
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<400> 58

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<210> 59
<211> 168
<212> DNA
<213> Chlamydia sp
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<400> 59

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<210> 60
<211> 153
<212> DNA
<213> Chlamydia sp
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<400> 60

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<210> 61
<211> 168
<212> DNA
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<213> Chlamydia sp

<400> 61

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agccttggt	acctattcgg	tatcagtact	cacagttag	atgaccattc	tttctgcttg	120
gctgcaggac	aattactcgg	gaaatcgctc	gattccttta	ttacgtct		168

<210> 62

<211> 198

<212> DNA

<213> Chlamydia sp

<400> 62

tccttctcta	aagaaggatt	cggatcctgg	catagcggtg	cagtatccgg	agaagtgtgc	60
gcatcgattc	ctattgtatc	caatgggtcc	ggactgttca	gctccttctc	tattttctct	120
aaactgcaag	gattttcagg	aacacaggac	ggttttgagg	agagtccggg	agagattcgg	180
tccttttctg	ccagctct					198

<210> 63

<211> 183

<212> DNA

<213> Chlamydia sp

<400> 63

tcgggagaga	ttcgggtcctt	ttctgccagc	tctttcagaa	atattttact	tcctatagga	60
ataacatttg	aaaaaaaaatc	ccaaaaaaca	cgaacctact	attactttct	aggagcctac	120
atccaagacc	tgaaacgtga	tgtggaatcg	ggacctgtag	tgttactcaa	aatgcccgtc	180
tcc						183

<210> 64

<211> 93

<212> DNA

<213> Chlamydia sp

<400> 64

atggcggaact	tggattcacg	agcctacatg	ttcaggctta	cgaatcaaag	agctctacac	60
agacttcaga	cgctgttaaa	tgtgtcttgt	gtg			93

<210> 65

<211> 1500

<212> DNA

<213> Chlamydia sp

<400> 65

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